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# APPENDIX A

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Assistant Commissioner for Patents  
BOX PATENT APPLICATION  
Washington, D.C. 20231

Sir:

Prior to examination of the above-identified new national phase patent application, please amend the application, as follows:

**In the Claims**

Amend claims 1-19 as follows:

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1. (amended) A contour collimator [(1)] for radiotherapy, comprising a plurality of plate-shaped diaphragm elements [(101, 102, 103, . . .)] provided in a guiding block [(10)] and movably arranged with respect to one another to form a contour diaphragm for a radiation beam [(13)] emitted by a radiation source [(12)] towards the collimator, and comprising at least one drive for moving the diaphragm elements, [characterized in that] wherein a drive [(111, 112, 113, . . .)] of its own is associated with each diaphragm element [(101, 102, 103, . . .)], [that] the drives [(111, 112, 113, . . .)] of a group of diaphragm elements [(101, 102, 103, . . .)] are arranged substantially adjacent to one another, and [that] a driving transmission [(121, 122, 123, . . .)] of its own is provided between each drive [(111, 112, 113, . . .)] and the associated diaphragm element [(101, 102, 103, . . .)].
  2. (amended) The contour collimator according to claim 1, [characterized in that] wherein the drives [(111, 112, 113, . . .)] are arranged substantially as a semi-circle.
  3. (amended) The contour collimator according to claim 1 [or 2], [characterized in that] wherein each driving transmission [(121, 122, 123, . . .)] has a flexible but tension-resistant and pressure-resistant power-transmitting element [(131, 132, 133, . . .)] one end of which is connected with the associated diaphragm element [(101, 102, 103, . . .)] and the other end of which is connected with the associated drive [(111, 112, 113, . . .)] and which is supported in a moving guide [(141, 142, 143, . . .)] in translatorily movable fashion.

4. (amended) The contour collimator according to claim 3, [characterized in that] wherein each power-transmitting element [(131, 132, 133, . . .)] is detachably coupled to the associated diaphragm element [(101, 102, 103, . . .)] via a coupling linkage [(151, 152, 153, . . .)].

5. (amended) The contour collimator according to claim 3 [or 4], [characterized in that] wherein each power-transmitting element [(131, 132, 133, . . .)] is detachably coupled to the associated drive [(111, 112, 113, . . .)] via a further coupling linkage.

6. (amended) The contour collimator according to [any one of claims] claim 3 [to 5], [characterized in that] wherein each power-transmitting element [(131, 132, 133, . . .)] has a spring band.

7. (amended) The contour collimator according to [any one of the preceding claims] claim 1, [characterized in that] wherein each drive [(111, 112, 113, . . .)] is formed by comprises a linearly acting motor.

8. (amended) The contour collimator according to claim 7, [characterized in that] wherein the motor [(111, 112, 113, . . .)] is an electric linear motor.

9. (amended) The contour collimator according to claim 7, [characterized in that] wherein the motor [(111, 112, 113, . . .)] is an electric motor having a linearly acting gearing [, preferably] selected from the group consisting of a rack-and-pinion gear [or] and a spindle gearing.

10. (amended) The contour collimator according to [any one of the preceding claims] claim 1, [characterized in that] wherein the guiding block [(10)] has upper [(16)] and lower guide plates [(17)] which are each provided with a plurality of upper guide grooves [(161, 162, 163, . . .)] and lower guide grooves [(171, 172, 173, . . .)], respectively, for the diaphragm elements [(101, 102, 103, . . .)].

11. (amended) The contour collimator according to claim 10, [characterized in that] wherein the upper [(16)] and lower guide plates [(17)] are each provided with a [preferably] rectangular opening [(18, 19)] which determine the maximum diaphragm opening and have a common middle plane [(20)] extending substantially rectangularly

with respect to the longitudinal direction of the guide grooves [(161, 162, 163, . . . ; 171, 172, 173, . . . )].

12. (amended) The contour collimator according to [any one of claims] claim 3 [to 11], [characterized in that] wherein the moving guides [(141, 142, 143, . . . )] are arranged substantially side by side in a moving guide block [(14)] and have moving guide gaps diverging in fan-shaped and bent fashion, in which one power-transmitting element [(131, 132, 133, . . . )] each is accommodated in translatorily movable fashion.

13. (amended) The contour collimator according to [any one of the preceding claims] claim 1, [characterized in that] wherein two superposed planes of drive arrangements are associated with each moving guide block [(14)], one power-transmitting element [(131, 132, 133, . . . )], accommodated in adjacent moving guides [(141, 142, 143, . . . )], being applied by two superposed drives [(111, 112, 113, . . . )] each.

14. (amended) The contour collimator according to [any one of the preceding claims] claim 1, [characterized in that] wherein two opposite groups of translatorily drivable diaphragm elements [(101, 102, 103, . . . ; 101', 102', 103', . . . )] are provided in the guiding block [(10)], two opposite diaphragm elements [(101, 101'; 102, 102'; 103, 103'; . . . )] each being guided in lower [(161, 161'; 162, 162'; 163, 163'; . . . )] and upper [(171, 171'; 172, 172'; 173, 173'; . . . )] common guide grooves.

15. (amended) The contour collimator according to [any one of the preceding claims] claim 1, [characterized in that] wherein each diaphragm element [(101, 101', 102, 102', 103, 103', . . . )] of a pair of opposite diaphragm elements is movable with its free edge facing away from the respective drive [(111, 111', 112, 112', 113, 113', . . . )] beyond the common middle plane [(20)] of the openings [(18, 19)] in the upper [(16)] and lower [(17)] guide plates.

16. (amended) The contour collimator according to [any one of the preceding claims] claim 1, [characterized in that] wherein at least one displacement pickup [(181, 182, 183, . . . )] preferably a potentiometer, for detecting the position of the corresponding diaphragm element [(101, 102, 103, . . . )] is associated with each drive [(111, 112, 113, . . . )].

17. (amended) The contour collimator according to claim <sup>2</sup>~~16~~, [characterized in that] <sup>comprises</sup> ~~wherein~~ displacement pickup [(181, 182, 183, . . . )] ~~is~~ a moving potentiometer which can be actuated translatorily.

18. (amended) The contour collimator according to [any one of the preceding claims] claim 1, [characterized in that] wherein at least one of the diaphragm elements [(106, 107, 108)] located in the region of the central middle ray of the radiation beam [(13)] is provided with at least one thickening rib [(23, 23', 24, 24')] extending in the translational direction.

19. (amended) The contour collimator according to claim 18, [characterized in that] wherein each thickening rib [(23, 23'; 24, 24')] engages a corresponding groove in the adjacent diaphragm element [(107, 108)].

**Add new claim 20, as follows:**

<sup>16</sup>~~16~~. (new) The contour collimator according to claim <sup>2</sup>~~16~~, wherein the displacement pickup comprises a potentiometer.

**In the Abstract**

Replace the Abstract of the international application with the new Abstract attached in Appendix A hereof.

**REMARKS**

Claims 1-19 have been amended herein for clarity and specificity, and new claim 20 has been added to claim the preferred potentiometer feature formerly recited in claim 16.

A new Abstract has been introduced

It is requested that the examination of this application proceed with respect to claims 1-20 as amended and now pending in the application.

Respectfully submitted,



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**Abstract of the Disclosure**

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A contour collimator has a plurality of plate-shaped diaphragm elements movably arranged with respect to each other in a guiding block to form a contour diaphragm for a radiation beam emitted by a radiation source towards the collimator, and at least one drive for moving the diaphragm elements. A drive is associated with each diaphragm element with the drives of a group of diaphragm elements being substantially adjacent, and a driving transmission arranged between each drive and the associated diaphragm element.

23  
A contour collimator has a plurality of plate-shaped diaphragm elements movably arranged with respect to each other in a guiding block to form a contour diaphragm for a radiation beam emitted by a radiation source towards the collimator, and at least one drive for moving the diaphragm elements. A drive is associated with each diaphragm element with the drives of a group of diaphragm elements being substantially adjacent, and a driving transmission arranged between each drive and the associated diaphragm element.

Abstract of the Disclosure

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A contour collimator (1) has a plurality of plate-shaped diaphragm elements (101, 102, 103, ...) movably arranged with respect to each other in a guiding block (10) to form a contour diaphragm for a radiation beam (13) emitted by a radiation source (12) towards the collimator, and at least one drive for moving the diaphragm elements. A drive (111, 112, 113, ...) is associated with each diaphragm element (101, 102, 103, ...). The drives of a group of diaphragm elements are substantially adjacent. A driving transmission is arranged between each drive (111, 112, 113, ...) and the associated diaphragm element (101, 102, 103, ...).

(Fig. 1 in addition to this)

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List of reference numerals

1	contour collimator
10	guiding block
12	radiation source
13	radiation beam
14	moving guide block
15	calibration plate
16	upper guide plate
17	lower guide plate
18	upper opening
19	lower opening
20	middle plane
21	side wall
22	side wall
23	thickening rib
23'	thickening rib
24	thickening rib
24'	thickening rib
101	diaphragm element
101"	section of reduced thickness
102	diaphragm element
103	diaphragm element
104	diaphragm element
105	diaphragm element
106	diaphragm element
107	diaphragm element
107'	diaphragm element
108	diaphragm element
111	drive
112	drive
113	drive
115	drive
117	drive
117'	drive
121	driving transmission
123	driving transmission
127	driving transmission
131	power-transmitting element
132	power-transmitting element

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133	power-transmitting element
135	power-transmitting element
135'	hook-like recess
137	power-transmitting element
137'	power-transmitting element
141	moving guide
143	moving guide
145	moving guide
151	coupling
152	coupling
155	coupling
155'	stepped recess
155"	pivot
155"'	cover plate
161	upper guide groove
162	upper guide groove
163	upper guide groove
171	lower guide groove
171'	lower guide groove
171"	ridge
172	lower guide groove
172'	lower guide groove
172"	ridge
173	lower guide groove
173'	lower guide groove
181	displacement pickup
183	displacement pickup
187	displacement pickup